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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,455	03/23/2004	Kazutoshi Higashiyama	A8319.0013/P013-A	1223
24998	7590	09/20/2005	EXAMINER	
DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP			WILLS, MONIQUE M	
2101 L Street, NW			ART UNIT	
Washington, DC 20037			PAPER NUMBER	

1746

DATE MAILED: 09/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/806,455

Applicant(s)

HIGASHIYAMA ET AL.

Examiner

Monique M. Wills

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,5 and 16-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5 is/are allowed.
- 6) ☒ Claim(s) 1 and 16-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/18/04; 7/27/05
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Information Disclosure Statement

The information disclosure statements filed March 18, 2004 and July 2, 2005 has/have been received and complies with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609.

Allowable Subject Matter

Claim 5 is allowable over the prior art of record, because the prior art is silent to a hydrogen producing device for supplying at least one type of material to a reaction part together with air, oxygen or an oxidizing agent to produce hydrogen including selecting from n_1 pre-set values a flow rate which was previously determined corresponding to required hydrogen production volumes; and for air, oxygen or oxidizing agent, supply amount of air, oxygen or oxidizing agent is set by selecting one from predetermined n_2 pre-set values of flow rates, where n_1 is smaller than n_2 .

Claim 1 would be allowable over the prior art of record, because the prior art does not disclose the use of two or more on/off valves to control the flow of reactants within a fuel cell system, to provide preset flows.

Claims 16-24 would be allowable based on their dependence to claims 1 and 5.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1 & 16-24 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 5-8 & 10 of U.S. Patent No. 6,890,673. Although the conflicting claims are not identical, they are not patentably distinct from each other because they have common subject matter as follows:

Claim 1 of '673 embraces instant claims 1 & 16-19 by necessitating: a hydrogen producing device for supplying at least one type of material to a reaction part together with air, oxygen, or an oxidizing agent to produce hydrogen by a specific chemical reaction, wherein: for the at least one type of material, supply amount of each material is set by on/off combination of two or more valves each of which is capable of providing a preset flow; and for the air, oxygen, or oxidizing agent, supply amount of the air, oxygen, or oxidizing agent is set by controlling opening of a variable-flow valve so that temperature of the reaction part is within a preset temperature range.

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The reference does not expressly disclose determining set values based on require hydrogen production volumes; employing fuel cell or power sources; and using the recovered exhaust heat fort water.

However, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to determine set values based on hydrogen production volumes, in order to meet the hydrogen demand of the specific chemical reaction.

With respect to claims 16-18, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to employ the hydrogen producing device in a fuel cell or power source, in order generate electricity to meet power demands of the consuming device.

With respect to claim 19, it would have been obvious to recover exhaust heat for hot water to reduce energy demand and processing costs.

Claim 5 of '673 embraces instant claim 20 by necessitating: at least one type of material including two types of materials which are water and methane.

Claim 6 of '673 embraces instant claim 21 by necessitating: the at least one type of material includes two types of materials which are water and methanol.

Claim 7 of '673 embraces instant claim 22 by necessitating: the at least one type of material includes one type of material which is an aqueous solution of methanol.

Claim 8 of '673 embraces instant claim 23 by necessitating: that the hydrogen producing device produces the hydrogen by a combined reforming method in which a combination of an exothermic reaction and an endothermic reaction is employed.

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Claim 10 of '673 embraces instant claim 24 by necessitating: at least one of the flow setting means provided to the supply systems for the air, oxygen, or oxidizing agent and the at least one type of material includes on-off valves connected in parallel.

Conclusion

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Monique Wills whose telephone number is (571) 272-1309. The Examiner can normally be reached on Monday-Friday from 8:30am to 5:00 pm.

If attempts to reach Examiner by telephone are unsuccessful, the Examiner's supervisor, Michael Barr, may be reached at 571-272-1414. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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9/17/05


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